contract to a private concern. His coins, whatever their form, were officially called "ingots." These, as we know, bore the legend, UNITED STATES OF AMERICA, and the Collector of Customs in San Francisco, T. Butler King, was authorized to accept them for tariff payments. That the U. S. government was the issuing authority and accepted them for the payment of Customs Duties, testified to their official status. On the other hand, legal tender status was not explicitly granted to the Humbert issued "ingots" (i.e., coins)[1] as this would have subjected him to the rigors of the Assay Commission. What did Humbert have to do with the Assay Commission? The answer is simple. That group, whose operations were ordinarily of a perfunctory nature, would have tested the Humbert "ingots" and quickly found that they conflicted with Section 8 of the Act of January 18, 1837,[2] the law that revised and restated Mint operations and regulated United States coinage. Section 8 concerned itself with the standard for gold coins, and clearly specified what alloy could be used. The standard was 900 parts of gold per 1000; the alloy was to consist of copper and silver- "...provided that the silver do not exceed one half of the whole alloy." One half of the whole alloy was 50 parts of silver per 1000.

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[1] pg. 22, "The Moffat & Co. Issues, San Francisco, 1849-1853," Part II of "Private Gold Coinage of California," Edgar H. Adams, Brooklyn, N.Y., 1913.

[2] "SEC. 8 And be it further enacted, That the standard for both gold and silver coins of the United States shall hereafter be such, that of one thousand parts by weight, nine hundred shall be of pure metal, and one hundred of alloy; and the alloy of the silver coins shall be of copper; and the alloy of the gold coins shall be of copper and silver, provided that the silver do not exceed one half of the whole alloy." (From) "Coinage Laws of the United States, 1792 to 1894, etc.," Government Printing Office, Washington, D.C., 1894.

The law was in conflict with the realities of the situation. California gold, in its native or raw state, was heavily alloyed with silver. To conform to the Act of 1837, Humbert would have had to refine his gold, removing some of the silver. For a relatively long time, he tacitly ignored the law, and his "ingots" (or coins) circulated without legal tender status. The day of reckoning finally arrived, but Humbert did not give up without a struggle. An examination of the extensive historical materials furnished by Edgar H. Adams[3] from San Francisco newspapers of 1852-53 tells us what brought the era of "880," "884," and "887" fine Humbert issues to an end.

As of September 4, 1852, W. L. Hodge, Assistant Secretary of the Treasury, wrote T. Butler King, the Collector of Customs, Port of San Francisco, to the effect that USAOG "ingots" (whatever the description) would no longer be acceptable for tariff payments, pursuant to Act of Congress, August 13, 1852. The Treasury Department till then had been acting upon advice of counsel in the belief that the Humbert and USAOG issues were for all practical purposes U. S. coins, viz. bullion of standardized weight and fineness officially stamped by a government officer. The Act of Congress in

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[3] pgs. 37-50, "The Moffat & Co. Issues, San Francisco, 1849-1853," Part II of "Private Gold Coinage of California", Edgar H. Adams, Brooklyn, N. Y., 1913.

question overrode this position without stated basis. Hodge promised early attention to the necessary substitute remedying the new situation, that of creating an official San Francisco branch mint. He also left a loophole: "In the meantime the Department will ascertain if any temporary ...circulating medium in California of the standard fineness agreeable to the above Act of Congress, ...may at least to some degree lessen the inconvenience arising from the present scarcity in California of the actual mint coinage." The problem placed in Humbert's lap was not concerned with the authority of the issuer, nor was there any question as to the value of the Humbert-USAOG "ingots." It was entirely one of alloy composition, as the Humbert-USAOG issues were slightly too low in their gold content and compensatorily too high in their silver content, to conform to the Act of 1837 which clearly specified 900/1000 gold fineness and no more than 50/1000 silver. Making gold of that fineness required parting acids (nitric and sulfuric) which were extremely difficult to obtain in California. Bringing acids overland was hazardous, when we consider the carboys of highly corrosive acid bumping and jostling in the covered wagons, thus presenting a danger of not only destruction of the wagon furnishings but possible agonizing death to the wagon inhabitants at every bump in the road. This, of course, is aside from the effects of a few bullets from hostile Indians. Bringing acids by ship around

Cape Horn was just as hazardous. Ship captains often flatly refused to accept acid carboys as cargo, both from the danger of deadly fumes building up in the holds and from the aforementioned dangers of spillage-- spillage from the ship's rolling and tossing-- spillage which might well result in shipwreck, so corrosive were the acids needed and so large the quantities.

Hodge's letter, published in the "San Francisco Herald," October 9, 1852, resulted in a mass meeting of merchants the same day. The proceedings of this meeting were published in full in the October 10th issue of the same paper. At the mass meeting ex-Governor Smith made a long speech reviewing the history of the situation and emphasizing the legal point that Treasury action hinged on (a) whether or not the "ingots" were official U. S. issues, (b) if they were of standard fineness. In connection with the "ingots" being official U. S. issues, he said that the original Treasury order authorizing "ingots" to be receivable in payment of tariffs would not have been legally authorizable unless the coins were legally acceptable at par. (The Sub-Treasury Act of 1846, Section 18, specified that customs duties were payable in gold, silver or Treasury Notes, the species of gold was not spelled out-- and I would add that during this period Bechtler was already in large scale operation, which

may be one good reason that "gold" was not more explicitly described. The Appropriations Act for 1851 specifically authorized conversion of raw California gold into "ingots" whose value would be officially impressed by a government official, viz. the U. S. Assayer of Gold, Augustus Humbert. Ingots had to be of full declared value, otherwise they would not circulate.) In short, Smith adopted the view that the 8/31/52 act did not specifically forbid "ingots" (i.e., coins) per se. Customs collector T. Butler King pointed out that the difficulty lay solely in the divergence in alloy composition between Humbert's "ingots" and regular U. S. gold coin. He also said that he had recently been appointed Assistant Treasurer of the United States, and was thus wearing two hats as he retained his Collector of Customs office. As Assistant Treasurer, he was unable to deviate from Hodge's interpretation, but he offered to receive "ingots" for tariff payments temporarily, if he could do so without risking jail. Ex-Gov. Smith pointed out the inconsistency of the legal situation: the intent of the 1850 act was to make "ingots" a circulating medium, the act of 1846 failed to specify the kind of gold that was acceptable, yet Hodges, as Assistant Secretary of the Treasury, had declared the "ingots" unacceptable. King reiterated that only fineness under 900 was at issue. The upshot of the meeting was a memorial, signed by most of the local merchants and addressed to Secretary of

the Treasury Thomas Corwin, pleading hardship and citing King's offer to receive ingots on his own.

At this juncture, as of October 12th, Humbert offered to make "ingots" at 900 fine, but declined to attempt to reduce the silver content of his issues to 50/1000. Not only was there an extreme shortage of parting acids, but there was also a serious shortage of copper. After October, 1852, almost no "ingots" were made of the lower fineness.[4]

Humbert was clearly treading a shaky legal tightrope. He quickly went along with the T. Butler King idea that the fineness of 900 was the prime issue, for wasn't the fineness clearly stamped upon his coins for all to see. However, as he spelled out in his letter, to the "San Francisco Herald," of October 12, 1852, he could not conform to the alloy requirements of Section 8 of the Act of January 18, 1837.[5] This being the case, it might only be a matter of time before King received a letter, or took it upon himself, to decide that he had to have full conformity with the law or else the Humbert "ingots" could not be used at the Custom House. Humbert knew that his coins, having a predominant silver alloy, were cold looking-- almost greenish in color, compared to the warm

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[4] A very small number of ten and twenty dollar gold pieces were coined by the USAOG in 884 fineness early in 1853.

[5] "It is manifest that to conform strictly to this standard of the Mint, in all its points-- that is, to make the coin of a fineness of 900 thousandths of gold, and the 'alloy of not more than one-half silver, and the balance copper'-- would involve the necessity of separating the silver from the gold and substituting copper. And it is very evident that this long, tedious, and expensive process cannot be adopted until the proper facilities are afforded by the branch of the Mint which is to be established in San Francisco, connected with which there must necessarily be refining and chemical works for the manufacture of acids."

appearing, almost reddish color, of regular U. S. gold pieces. If he could come up with a composite alloy of gold and silver, with some copper, that would make his "ingots" more or less compatible in appearance to U. S. gold coins, he could, in effect, "have his cake and eat it too."

While on a trip last fall, I purchased a copy of the Adams 1913 reference on Private Gold Coinage, and having nothing else to read on the plane home, I reread that section of Part II dealing with Humbert's problems. The more that I read, the more I thought of Franklin's handkerchief story alluding to alleged varying finenesses and alloy differences of the seven perfect prooflike and probably other twenty dollar coins from his find. The more that I thought about it, the more convinced I became, that most of the Franklin Hoard USAOG pieces had to be experimental strikings in various alloy combinations. Of course, I remembered being told that the original owner of this material had turned in $14,000. to $15,000. in gold coin, in 1933-34, and that those coins were mainly of twenty dollar denomination, and that all of them had been obtained by the family prior to 1862. The possibility existed that some of the impaired and handled prooflike coins that Franklin disposed of could have been USAOG coins of normal fineness, some of the experimental alloy pieces having become mixed up and exchanged with the coins turned in. Not knowing exactly what I would find out, I was determined to have tests

made in order to ascertain just what these coins were made of. With this thought in mind, I contacted Dr. Vladimir Clain-Stefanelli at the Smithsonian, hoping that he could help me by having a non-destructive quantitative analysis made of sample coins at a government laboratory. After all, Dr. Stefanelli had such tests performed for me before, and there was also the question of cost. Unhappily, after an exchange of correspondence and a talk in New York City, Dr. Stefanelli advised me that he could not have tests made for me at an early date, if at all. Being forced to turn elsewhere, I contacted a friend at M.I.T. seeking an answer to my problem. He referred me to the Research Laboratory of the (Boston) Museum of Fine Arts. Speaking to the laboratory director on the telephone, I was advised that they could perform X-ray fluorescence tests for me, which would not harm the coins in any way. Knowing that their X-ray spectrograph was capable of providing an accurate quantitative analysis of the alloy of a coin to within one tenth of one per cent,[6] I sent them three representative coins from the Franklin Hoard. One of these was the perfect prooflike specimen from the Murrell-Clifford collections (USAOG-124). The other two coins were pieces Franklin had either sold on his own or had kept himself for a period of time before selling. The first of these he sold to Werner Amelingmeier, January 1, 1959, for $150. (USAOG-104); the second one was the best of the "impaired" prooflike

strikes, that sold to Harry Forman, April 1963, for about $1,800. (USAOG-111). My sampling was certainly representative; I had a perfect prooflike coin (one of the seven), and I had examples of both the worse and nicest coins that Franklin had handled himself.

In sending the three Franklin Hoard coins to Boston I was prepared to find either similar compositions varying only minutely and randomly, testifying to a single melt, or-- if the pieces were in fact experimental as I believed-- exact round numbered percentages such as 880, 890, 900, 910 gold. Early in May I received the test results, consisting of three signed certificates from the Museum of Fine Arts. There were no opinions given on these certificates, just the results of an analysis of each coin "by X-ray fluorescence to determine the percentage of gold and silver or copper in the alloy."[7] The test results were as follows:

	gold	silver	copper	trace(residual)elements	weight
USAOG-111	910	80	0	10	514.6(grains)
USAOG-104	890	90	5 to 10	10 to 15	516.6 "
USAOG-124	880	85	30	5	516.0 "

It should be noted that the weights vary inversely with the amount of gold; the lightest one has gold of above

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[6] pg. 56, "Counterfeit, Mis-Struck, and Unofficial U. S. Coins," Don Taxay, New York, 1963.

[7] Certificates (3), Research Laboratory, Museum of Fine Arts, Boston, Mass., Museum Nos. T.L. 13,428, 13,429, 13,430, Examination Nos. 67.10, 67.11, 67.12, all dated May 5, 1967 (Appendix items, Nos. 25-27).

Federal standard fineness, the heaviest is a little low in gold content, exactly as would have been expected in fancy experimental productions. Of course, the test results for these three coins cannot begin to tell the story of USAOG experimentation, but they confirmed to me that most, if not all, of the Franklin Hoard USAOG twenty dollar coins, were experimental strikings in various alloy combinations.

If the above list were longer, with test results from many other coins, we would have a basis for evaluation that would better tell us Humbert's motives. As it is, we can assume that the alloy experiments began in October 1852; we know that they continued into 1853. We know that the systematic addition of small percentages of copper, and varying the proportions of gold and silver (by adding pure gold from a 999 Fine Proofing piece), would produce the desired mixtures for comparison. California gold, normally paler and more greenish than the eastern ores, could be altered in appearance only subtly by such fiddling around. Walter Breen has ventured the guess that alternatively, the very slight differences in appearance that can be made out might well have been useful for on-the-spot preliminary estimates of fineness of samples of coins brought in. If, as I suspect, the group of seven perfect prooflike coins represented part of a larger group comprising finenesses from, say, 850 to 950/1000, with varying proportions of copper alloy added to the normal silver, their purpose will be

clear enough in this context. However, that supposition, as well as my earlier guess that Humbert strove for compatibility in appearance with regular U. S. gold coins, can only be held in abeyance until X-ray fluorescence studies have been made on the remaining perfect prooflike twenty dollar pieces and similar coins from the Franklin Hoard. For all we know, the unearthing of the long lost internal records and correspondence of the USAOG, particularly the letters exchanged between San Francisco and Philadelphia, might indicate a completely different reason for Humbert's experiments. The fact that the various Franklin Hoard USAOG coins were struck upon highly burnished planchets is significant. It might suggest that the experiments with different metal combinations resulted in badly discolored or streaked flans, which required extensive polishing for a degree of uniformity in appearance. Or, more likely, groups of these prooflike coins were prepared for T. Butler King and other officials, to illustrate the similarity of appearance produced by such manipulations.

While awaiting the results of the Museum of Fine Arts tests, I asked Harvey Stack if he could make arrangements for additional X-ray fluorescence tests. He eventually did so, and told me that I could have eight or ten coins tested. I particularly wanted to know the composition of the remaining six perfect prooflike pieces, and in this regard asked for the Garland, Kagin and Sloss examples. The Garland coin was

not available, being the subject of other studies. The Kagin coin was sent to me by Newman on July 28th, far too late for any kind of laboratory work. Dr. Sloss simply ignored the request to send his coin for alloy determination. These actions indicated to me that the Study Group members were clearly afraid of any data prejudical to their conclusions arrived at long ago.

The irrefutable evidence that the Franklin Hoard USAOG coins constitute experimental alloy trials substantiates my earlier contention that Fuld and Newman misinterpreted the Fuld X-ray diffraction tests. In the face of the Museum of Fine Arts tests the claim that the Franklin Hoard USAOG twenty dollar coins are forgeries becomes totally preposterous. Are we to believe that a forger would have made separate melts with exactly calculated alloy percentage compositions, not detectably different, for each of several prooflike coins? How would such a person have known to predict different alloys? (Where did he do such work? Why did he do it?)

There is much additional collaborative evidence that all of the Franklin Hoard material is authentic and originated in 1852-53. For instance, I have a $44.77 essai coin ingot with an A. HUMBERT U.S. ASSAY obverse (see my TG-117). This is "F-1" of the three different "tight target" obverses, which I call F-1, F-2, F-3. The use of U.S. ASSAY (without the -ER) is found in but one other place. That is on the reverse of an

1852 ten dollars, 884 THOUS., copper pattern. This unique and unpublished coin, unknown to Adams, is in the Johns Hopkins University collection, and was only brought to my attention in recent months. Perhaps a better case in point is the badly rusted die that Franklin obtained for me in 1958 (my D-105), earlier mentioned, and two related items. The die was brought to me so badly rusted and corroded that in order to read it I had to soak it in a rust removing solvent. It is still severely rusted, so much so as to prevent any impression of any kind to be taken from it, even if I believed the die would remain unbroken if so used. The only known impression from this die is found overstruck upon the obverse of an 1852 large cent. It is muled with the conventional USAOG twenty dollar obverse, apparently not yet in Group IX condition (USAOG-121). As the cent overstrike shows an impression of this identical die in unrusted condition, and is heavily patinated, clearly it was made earlier. Franklin obtained the overstruck cent while on a trip to Arizona, June 29 - July 27, 1959. He gave it to me as a gift upon his return. About a year earlier, while on a similar trip, Franklin obtained a rubbing of a $38.00 ingot of ARGIENTI / & Co. / BANKERS. This piece was dated 1851 and bore a logotype die stamp reading SHULTZ & CO / ASSAYER in small letters. It was validated by being counterstamped by two USAOG die stamps, one of them of the four line tablet type, the other from a logotype reading A. HUMBERT / U.S. ASSAYER (my TG-132, USAOG-129). Both USAOG

overstrikes obscured pertinent components of the original ingot, one of them covering ARGI of ARGIENTI, the other half of the four numeral denomination stamp. In spite of the value of this highly important piece being seriously compromised by the two validation stamps, I asked Franklin to obtain it, which he did while on the 1959 trip mentioned, and he sold it to me at the same time that I obtained the cent overstrike.

Adams, in discussing the operations of Shultz & Co., reproduces a biographical sketch of William Thompson Garratt, who was Judge Shultz's partner.[8] In both the published sketch and in a dictated statement, Garratt states that he and Shultz coined for Argienti & Co., bankers, and that they made a great many dies for other private coiners. He is also quoted as saying that Albert Kuner engraved the dies made in the Shultz & Co. foundry, and that he was responsible for the turning or machine work on them.[9] Therefore, we can safely say that Kuner was the engraver of the dies used to make the Argienti ingot, and that he made the SHULTZ & CO / ASSAYER logotype die stamp found on the reverse of that ingot.

Examination of the cent overstrike just mentioned reveals that the small letters punched into its 1852 reverse are identical to those of the SHULTZ & CO logotype and the "tight

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[8] pg. 75, "Various Californian Private Mints, 1849-1855," Part III of "Private Gold Coinage of California," Edgar H. Adams, Brooklyn, N.Y., 1913. (From) "Builders of a Great City," San Francisco Journal of Commerce Publishing Co., S.F., 1891, Vol. I.

[9] ibid. Pages 75, 76.

target" USAOG obverses. Small letters on the die of the cent overstrike include U, E, Y, S and R, with peculiarities enabling immediate identification: flat base on U, upper left serif of E and of Y missing (punches chipped), R with vertical tail placed well to r. and with very small tight upward curl, S with peculiar serifs. These letters are also found on both the Shultz logotype and my obverse dies F-1, F-2, F-3. Large letters on the 1852 reverse die of the cent overstrike (MOFFAT & CO.) include peculiarities on M, O, T, C and the ampersand identical to those found on ARGIENTI & Co. BANKERS and S.M.V. DOLLARS, etc. on the Argienti ingot. Easily recognized is the square chip out of the upper left corner of the T.

Equally careful examination of the (1853) A. HUMBERT two line logotype die stamp reveals that the same identical small letter punches were used to make it, as were used earlier (via the SHULTZ & CO logotype) on the 1851 Argienti ingot, subsequently to make the 1852 "MOFFAT & Co." reverse, and still later to make up the three different "tight target" obverses, F-1, F-2, F-3. Not only was the identical alphabet of letter punches used, but the A. HUMBERT validation stamp tells us that some of them were replaced: the A, H, M, B, remain the same, but the U, E, Y, S and R, have been replaced by different letters not defective. This is, as would be expected, new

letter punches being made to replace defective ones, non-defective ones remaining in use.

Adams makes it clear that Kuner earlier (1849-50) did work for Moffat & Co.,[10] making him the logical local source of letter and numeral punches and dies for both Humbert and the USAOG. Further study of the rich historical source material provided by Edgar H. Adams suggests that the badly rusted "MOFFAT & Co." reverse die dated 1852 was made early in that year, probably simultaneously with the dies for the Moffat 1852 ten dollars, 264 GRS., which does not bear Humbert's name on the reverse, but which does have the eagle design used by Augustus Humbert on pieces of different denominations. Additional reading and analytic study indicates that the "tight target" obverse dies (see USAOG-132) were prepared in San Francisco late in the summer of 1852. There was a definite need for an ingot design minimizing the number of new denominational dies that would be required, as well as for one suitable for both alloy combinations and coins of the twenty dollar denomination (see my TG-118 and #1 of 9/2/66, as well as the piece in the Lilly collection). The last Humbert (1852/1) twenty dollar coin was struck on April 2, 1852[11] (AH-100), and obviously the hubs for the 1853 USAOG twenty dollar coins did not arrive until late in the year. Confirmation that the F-1, F-2, F-3 obverses were made in August or September 1852, is established by the fact that the USAOG issued bars commencing

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10 ibid. Page 94.

11 See monthly reports of A. Humbert, U. S. Assayer, and the United States Assay Office of Gold; (National Archives: Records of the Bureau of the Mint, Record Group 104, Treasury Section.)

in October 1852 ($300,275.21 worth)[11] and we know that the "tight target" type obverse was subsequently used on such bars since at least one survives (see my TG-119, a $83.71 bar bearing a serial number).

With the correct chronological progression of the 1851 SHULTZ & CO logotype, the (early) 1852 "MOFFAT & Co." reverse, and the (later 1852-53) "tight target" obverses clearly defined historically, we find that their punch-linkage to the (1853) A. HUMBERT two line logotype die stamp makes sense. With such progression confirmed by the replacement of five defective Kuner letter punches on the A. HUMBERT logotype, the cry of "forgery" sounds even more ludicrous and ridiculous than before.

The only logical choice of an individual who had access to government hubs, or to dies made from them, collars, and simultaneously dies, logotypes and punches by Albert Kuner, would be Augustus Humbert or one of his employees. Duplication of the parts of four old Kuner alphabets would be impossible. Creating extreme rust on an old die or ancient patina on a cent overstrike in a very short time would be almost equally impossible. No counterfeiter in his right mind would waste time trying to manufacture, at inconceivable expense in research and production, obscure material like a SHULTZ & CO logotype, stamping this onto

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[11] See monthly reports of A. Humbert, U. S. Assayer, and the United States Assay Office of Gold; (National Archives: Records of the Bureau of the Mint, Record Group 104, Treasury Section.) See footnote previous page.

an ARGIENTI & Co. ingot (itself made with enormous difficulty and expense), and then ruining his own handiwork by twice stamping it (in the worse possible places) with two different (again fabricated with great difficulty) USAOG die stamps. The ad hoc assumptions required to sustain any such notion as that a forger made all of the two dozen or more hubs, dies, puncheons, alphabets, logotypes, collars and similar items, required for the Franklin Hoard material that I either now own or have handled, are too farfetched to remain this side of lunacy. The necessary amounts of time, effort, research, planning, material and costs, not to mention the difficulty in producing many pieces in different precise alloys requiring different melts of gold and silver, are stupendous in the extreme. We are asked to believe that all this was done in a short period of time. We are asked to believe that it was done for comparatively trivial amounts of money-- as a practical joke without unusual financial rewards being anticipated. It would be easy to demonstrate that the total amount made from the sale of all of the Franklin Hoard material, from coins to proofing pieces, by the supposed forger, would not begin to cover the expenses required for doing the necessary research, assembling the materials, making the hubs, dies and collars, creating the alphabets if he had not managed to discover original sets of punches (recorded as having been destroyed by fire in 1906, making the dozen or fifteen different

meltings of gold alloys, and otherwise creating these obscure items.

We are asked to believe all the above profusion of equipment, of research, of manufacturing difficulty. We are asked to believe that mint facilities were available for melting and refining, drawing and rolling, cutting and stamping, not to speak of coining presses capable of hubbing steel dies. We are asked to believe that one man did all this undetected, and while doing so, managed to completely fool and deceive the author of this document.

If the Garland owned perfect prooflike example is false, then all of the coins, essais, ingots, experimental, trial and proofing pieces, linked to that coin by punch or die impression, much less source, are all, without exception, also false. There is no alternative: either all, including the Argienti ingot and the 1852 Moffat die, are fraudulent, made at unimaginable costs and difficulties, or else they are genuine. If false, the amount of additional explanation required is immense. If genuine, they are all readily explainable without introducing ad hoc assumptions.

I thought the Franklin Hoard items genuine as I obtained each one in turn and studied it. My records and research of the past ten years, and, most particularly, my work of the past few months, only confirms that consistently held opinion.

In closing, I would like to thank Walter Breen for his tremendous help in checking my conclusions and for independently studying the Franklin Hoard material in its entirety. I would also like to thank Harvey Stack for his continued assistance and, last but not least, Larry Steur, of the Medical Illustration section of the New York City VA hospital, for his magnificent photographic work.

John J. Ford, Jr.

August 1967

AN ORGANIZATION INTERESTED IN THE PROBLEMS OF THOSE WHO OPERATE SMALL MINING PROPERTIES IN ARIZONA

ARIZONA SMALL MINE OPERATORS ASSOCIATION

OFFICE OF STATE SECRETARY
CHARLES F. WILLIS
508 TITLE AND TRUST BLDG.
PHOENIX, ARIZONA

October 23, 1953

COUNCILS

AGUILA
AJO
ALAMO
ARIVACA
BENSON
BISBEE
BOUSE
CASA GRANDE
CAVE CREEK
CHERRY
CHLORIDE
CLEATOR
CLIFTON
CONGRESS
CROWN KING
DOUGLAS
DUNCAN
ELLSWORTH
FLORENCE
GLOBE
HUACHUCA
KINGMAN
KIRKLAND
KLONDYKE
MAYER
MESA
MIAMI
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MORRISTOWN
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OATMAN
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QUARTZSITE
QUIJOTOA
RAY
SAFFORD
SALOME
SELLS
SUNFLOWER
SUPERIOR
TEMPE
TOMBSTONE
TUCSON
VERDE
WICKENBURG
WILLCOX
WINKELMAN
YARNELL
YUMA

Mr. Paul Franklin,
964 Amsterdam Avenue,
New York 25, New York.

Dear Mr. Franklin:

Thank you for your letter of October 21. I cannot tell you what a thrill it was to receive the paper weight or pocket piece of silver which came from an old Arizona mine. I had heard about these but had never seen one although some of the old-timers say they were relatively common many years ago.

I have not had a chance as yet to dig in to find out anything about the Thorne Mining and Refining Company. There is nothing in the easily available records. However, we will do some digging to see what we can find out.

We may have to put a little story in Pay Dirt to see if some of the old-timers can furnish us some leads to ascertain who they were and when and where they operated. This story would give us an opportunity to ask others if they know of similar bars of gold and silver.

It was very thoughtful of you to send this to me.

I wish to acknowledge and especially thank you for the Money Order for renewal of membership and donation to our Special Expense Fund. Your receipts are enclosed.

Hoping we will be able to obtain additional information for you, and with kindest regards, I am

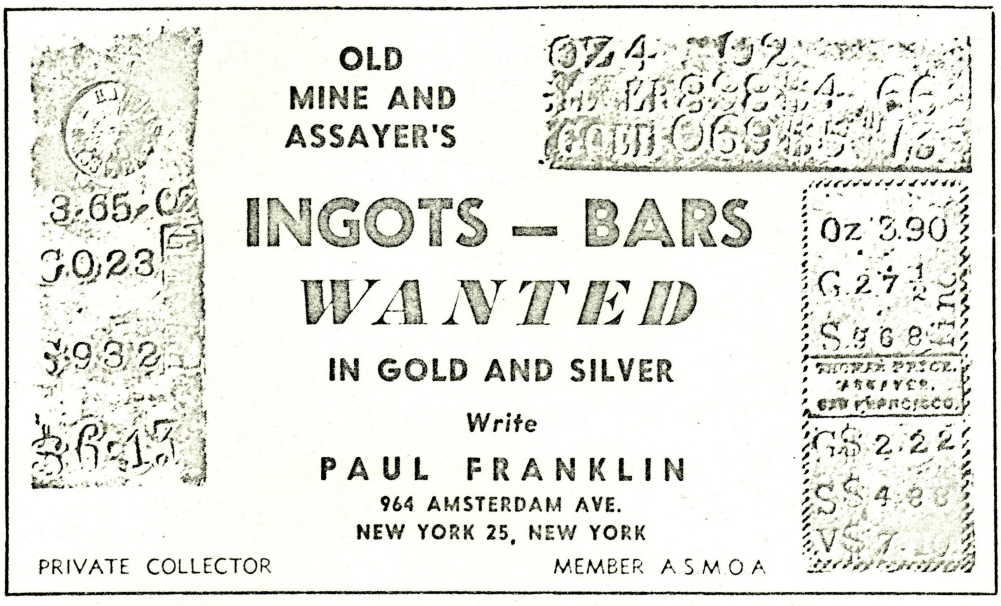
Sincerely,

Charles F. Willis

Charles F. Willis
State Secretary

CFW:VSW

#1


OLD
MINE AND
ASSAYER'S
INGOTS — BARS
WANTED
IN GOLD AND SILVER
Write
PAUL FRANKLIN
964 AMSTERDAM AVE.
NEW YORK 25, NEW YORK
PRIVATE COLLECTOR
MEMBER A.S.M.O.A.

#2

Mesa Arizona

Sept 1953

My Dear Mr Franklin;

You are certainly getting to be quite a writer. I really do not know why I am going to all this trouble for you as I do not need the money.

All your questions are too numerous too answer. The bar with the three impressions on it I wish to retain and is not for sale at any price at the present time.

I visited my sister about two weeks ago and mentioned the articles I sold to you. She recalled that in my deceased brothers possessions, which she has, there were a considerable number of gold and silver coins. there are two that probably will be of interest to you. Both show the same impression as that on the large bar you purchased from me in Aug. They are both Twenty dollars in gold. One which my Sister wishes to keep has a fancy gold link soldered to it, so that it can be worn as a charm. This one is larger than the other and struck off to one side one side like those coins you showed to me on one of

#4

your earlier visits here. The second one I borrowed from her to have the enclosed photographs made. It showes evident signs of use and this I do not understand as I am sure they were never put into circulation but of course I could be wrong. If you are interested in it I may be able to get it from her for you.

I am not hoping to hear from you but if I know you I probably will. Good health and ADIOS

F. Kozy

#4A

Mesa Arizona

Oct 18 1953

Dear Mr Franklin;

I am sorry if I caused you any alarm with the empty envelope,it was by accident that it was mailed without contents. This one should more than make up for my mistake. Sorry to say that my Sister is unwilling to part with the other Twenty at any price. I will go through the other coins at the earliest possible moment and let you know if there are any coins of other California Companies.

I am enclosing the Twenty I sent you the picture of and you may let your friend examine it and determine its worth. It is hard for me to say whether your offer is fair or not. I'll mull it over and let you know. My Sister is leaving the business end of the deal up to me, I naturally want to do the best I can and I believe the coin should bring a considerable amount above the price you mentioned. Let me know if you think you can do better. Wishing you luck and good health.

Sincerely F. Korff

#5

Sven Skaar, Blue Tent Road, P.O.Box 445, Nevada City, California.

Owner 49er Museum
President Nevada County Historical Society.

Mr. Paul Franklin

30 Phillips Road

Massapequa Park

L.I., N.Y.

Dear Mr. Franklin:

The Chamber of Commerce gave me your letter to answer.
Yes, I know quite a bit about assayer James J. Ott. As a matter of fact I'm just preparing a paper on him for our Society's next Bulletin, and I'll send you one when it comes off the press.
By the way, you ought to join our Society as I believe you'd like to recieve our bulletins. Membership cots you only one dollar per year. If you're interested send a check for that amount to N.C.H.S. % Charles Buck, National Hotel - he's our treasurer.

Yes, I have a couple of Ott's bars. I thought I was the only one who had one. You see, I bought the office when his son died in1953. I bought it to preserve it as the new highway is going straight through this lol year old business house.

I can't remember exactly what the gold contents of the bars are- they're in the bank, but I believe one is in the neighborhood of $15.- and the other about 50 if I'm not mistaken. Is yours for sale and if so how much do you ask for it?

Sincerely yours,

Sven Skaar

P.S. I collect Western Covers — especially Calif. expresses. Ghost towns etc.

S.S

#6

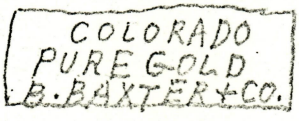
Nov.9,1952

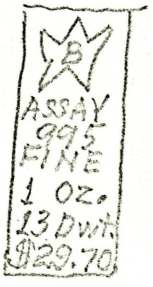
Mr. John J. Ford,Jr.
15 Aldin Lane, Island Trees
Hicksville,L.I.,N.Y.

Dear Johnny;

Finally received a letter from my friend in Phoenix regarding the second Gold Bar that I spoke to you about in your office several days days ago. He has gotten ahold of several others since then . I am in doubts about getting all of them from him but may be able to acquire a few, I hope.

Below is an exact copy of his description of the piece. He also acquired one twice as large with practically the same inscription.





Sounds interesting and I can't wait to see it. I told him to be on the lookout for gold and silver bars of the type in the photographs you sentme.

All I could discover on my trip out there was straight silver bars with no sign of gold mixed with any of them. He gets around a lot more than I did tho so I have high hopes.

Hoping to hear from you soon and that all is well with you and your wife.

Sincerely yours

Paul Franklin

#7

D-1458 (10-59)

DR. GEORGE FULD
P.O. BOX 9035
AKRON, OHIO 44305

9/30/64

Dear Mr Allemeier:

A number of independent "experts" are reexamining the so-called "proof" and first strike 1853 US Assay office 900 fine $20 pieces. These pieces, of which you owned several of in 1958 are "counterfeits" - (only can speak of the ones so far seen & examined!) — however the most horribly deceptive we have ever seen.

If you still own any, we would like to examine & photograph it & it will be promptly returned to you. Send to us fully insured by registered mail, I will check & send to Eric Newman & he'll return directly to you.

Any light you can shed on this matter would be sincerely appreciated. You can call me at any time 799-4197 (area 216) from 8:30-4:30 or home 836-1553 If you want please don't discuss this

#10

with John Ford, although he is
aware of the investigation.
I am leaving Utica for
several days Monday a.m. soon,
so would appreciate your prompt
reply.

Thanking you for your cooper-
ation

Cordially,

AWA CU 434

excuse haste stationary - just ran out.

#10A

Oct. 11, 1964

Mr. Eric P. Newman
P.O. Box 14020
St. Louis, Mo. 63178

Dear Eric:

Since you are the only one of the self-appointed vigilantes to have the decency to contact me direct, in reference to the 1953 USA0G $20, 900 THOUS., coins, I am pleased to supply to you the following information.

There were seven brilliant proof coins in the 1957-58 hoard that I (and NN) obtained through the offices of Paul Franklin. These coins were all from the same obverse and reverse dies, and we found no appreciable difference in the die states. Some characteristics of the obverse die are: Left end lacking on scroll; 9 re-cut vertically; first 0, first punched too high; nick in die on rim over last E in [illegible]; die defective above E in UNITED. There are many different reverse dies for the '53 USA0G twenties; the reverse die used for the proofs we call "Rev. A." It can be easily identified by a tiny tit near the top of the right stand of the letter "T" of UNITED, and three lash-like defects above (and to the left of) the "F" of CALIFORNIA. There are also two fine die breaks at the bottom of the reverse, in the peripheral field.

I explained to you how these coins were purchased on the telephone. All were wrapped in old, yellowed linen handkerchiefs. The weight of each piece was marked in lead pencil on the handkerchiefs; there were no notations as to alloy differences re these seven coins. Franklin was not able to get the handkerchiefs, nor was he able to obtain a family journal, which would be a very fruitful source of data. However, he did manage to copy down the weight of each of these proof coins, from the handkerchiefs. As soon as we got the coins to the office, Walter Breen and I weighed each of them. Subsequently, the coins were sold, with the exception of two specimens, which are now both in my personal collection. I will list the seven proofs, and give you the weight of each as obtained with the coin, as weighed by Breen and myself, and tell you to whom we initially sold each piece. Where possible, I will tell you the present whereabouts of each specimen:

516½ Grains (WB-JF) Handkerchief	516 Grains — Ford coll.
516	516 — Ford coll.
514½	514 NN to E. Landau, to NN, to Jake Dell, to J. H. Murrell*
515	515 NN to W. Amolingmeier, to Jim Sloss, 2/3/59, at $1200.
516½	516 PF to Mike Kolman, 8/15/58, at $1200.
516¼	516½ NN to E. Yablun, Yablun to Stack's, to J. H. Murrell*

#12

NUMISMATIC GARLANDS

By

Paul E. Garland
17556 PARK AVE.
MELVINDALE, MICH.

Beyond the woods, where the river curves, there are no rapids and the water flows smoothly. Farther downstream, the rocks make an angry current out of a stream that was soft and silent.

Have you ever purchased a coin that exceeded more than a thousand dollars in value? Lots of collectors have. How would you feel if you made a purchase of this nature and later found the coin to be counterfeit? Would you be angry? My thoughts tell me you would answer the foregoing question by saying, "I would have the coin authenticated." Now, I must ask you where you would have the authenticating done? More than apt your answer would be a major coin dealer. Let me tell you this. There are no coin dealers in this country capable of determining authenticity. They do not have the costly Xray equipment on hand to do the job.

To anyone who has found himself in the above position, I have a few words of advice. If you purchased the coin and accepted a piece of paper attesting to the genuiness of the specie, regardless of who issued the paper, I would have the coin Xrayed. This is the only way to know for sure that your coin is genuine.

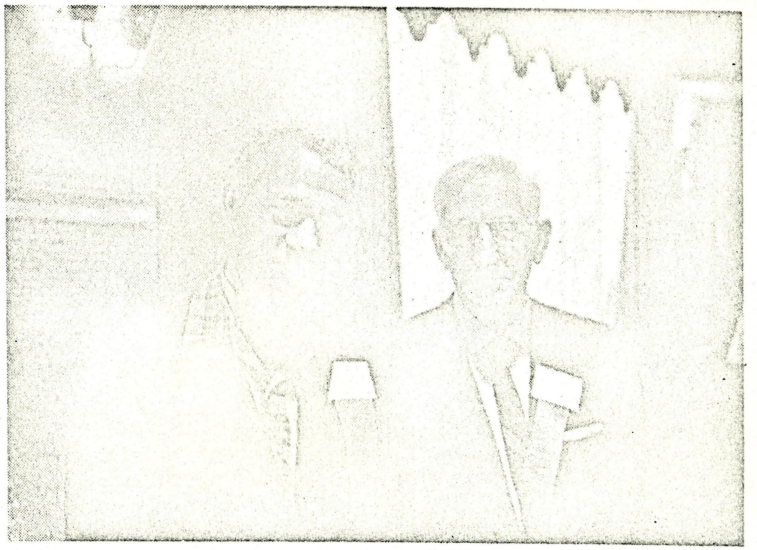
The cost of this operation exceeds the value of most key coins, causing a problem that can only be rectified by one of two groups: The American Numismatic Association or the United States Government. Sound reasoning tells us that the A.N.A. is the agency to select. But, so far, their attitude has been: "This problem does not exist or somehow it will correct itself." It does exist and furthermore, it will not correct itself. The counterfeit coins are coming into our market today at an alarming rate. Fortunately, most of them can be detected with the eye. However, some of them are not this easy to detect. It is against these that we must take concrete steps to halt a menace before it devours our hobby.

The A.N.A. should set up an authentication center even before it builds a home. This problem could be the one reason that a home will not be needed if allowed to continue. This service should be made available to any member at cost. Then when we purchase an item of this nature, we will not have to rely on the word of an individual that the coin is genuine.

To those of you who doubt me, let me make it clear that there are counterfeit coins on the market today that no dealer can detect without the aid of special equipment. This equipment costs far beyond the means of the largest dealer in America. I am not fooled by the braggarts who attend coin conventions for prestige, and who brag of the size of their holdings. Most of them are there to acquire or sell items to pay next month's rent, the same as most of us common dealers. The only differance is our hat size remains the same. Therefore, it must be an organizational effort to build this center.

I have seen false coins from the foremost validators known. In fact, I am the not-to-proud possessor of a false coin that I paid three thousand, three hundred dollars for. It is as false as Hensteeth. This coin has a pedigree all the way back to the press. It was declared genuine by the best known house of authentication in our country. In fact, it was declared a proof. It has passed through the hands of several of the best known and trusted dealers in our country. Other pieces are now resting in the collections of some of America's best collections, with the owners totalling unaware that the pieces are counterfeit.

At this writing the river is smooth on the surface, but the undercurrent is boiling. Together with John Pittman, Dr. George Field, Eric Newman, and several other of the best known Numismatists in the country, we have been able to prove that the coin is false.



C. W. Rankin of Fayetteville, N. C. new President of The North Carolina Coin Clubs Association with H. Mack Owen, (left) of Salisbury, N. C. who is the newly elected Secretary/Treasurer of the North Carolina organization. This photo was taken in the display room at the NCCC Association convention which was held in Raleigh, North Carolina recently.

Several letters have exchanged hands, threatening law suits and other attempts to silence us; but the public will know the facts. If any of you are fortunate enough to attend the G. E. N. A. Convention in New York, the first week-end in December, be sure to attend Dr. George Field's talk in the Educational Forum on this very coin. We intend to see this through. You may also want to read Dr. Field's article, "Origin of Washington 1783 Cent," in the November issue of the Numismatist to see the thoroughness of this man's work. Do not confuse this Washington Cent as the coin I have been writing about, because it is far more valuable than any of these.

It would be possible to reveal the entire story now, but as yet we do not know definately who made them. We also want to examine two more pieces, and at this time we cannot locate the owners; because certain dealers will not tell us who owns them. It would help immeasurably if these people would consent to the requests of our group voluntarily; otherwise, they will be requested to do so by government agents.

I hope by next month or January at the latest to be able to tell you the rest of this story. Until then, May God bless you and May all your coins be genuine.

11-64

EPN 2

516 3/4 Grains Handkerchief 516½ Grains HN to H. Clifford, 3/3/58, at $1100.

* One of the Murrell coins was sold to Kagin-Hollinbeck at the 1964 ANA (Cleveland) Convention, together with other Pioneer gold coins.

To my knowledge, Murrell owns his second piece, and both Moss and Clifford still own their examples. I do not know the present whereabouts of the Kolman specimen (which is the only one out with the exact correct weight of 516 grains).

The Kolman specimen was from a handkerchief marked ".020 Thous. Copper." While we believe that all seven pieces were struck in Philadelphia, and that these were made in different silver-copper alloy ratios, this piece is the only one which we were able to establish the original alloy notation on. (Standard U.S. Mint alloy for gold: 900/1000 = .050 silver - .050 copper to .033 silver - .067 copper.) Our source, with whom Franklin had quite a discussion, recalled reading about a controversy in 1853, at the USMC, concerning the amount of copper alloy needed for the 900 Thous. coins, in order to conform with (then) existing U.S. law.

TECHNICAL ERRORS HERE

Subsequent to the unearthing of the seven proofs, a number of highly attractive "Proof-like" first strikes were obtained from the original source, and friends of his, including his brother. (The original owner turned in $14,000. to $15,000. in gold coin, in 1933-34.) These were from various reverse dies. Probably the best of them was sold to Bob Batchelder in 1962-63. It was from the reverse die with a dash-like mark between TE of UNITED. Another, handled first strike, was sold to Gaston DiBello at the 1958 ANA (NY) Convention, for $225.00. Many of the "Proof-like" specimens have changed hands as proofs.

BEST TO NSP?

In response to an inquiry by L. G. Werner, I wrote a letter to Huston Bradfield, which was printed in the August, 1963 issue of "The Numismatist," on pages 1094-95. An earlier reference, in the same magazine, to the 1853 U.S.A.G. $20, 900 "THOU". proofs, can be found in the April, 19-- issue, page 111. Further information can be found in Part IV, "Pattern and Experimental Pieces of California, 1849-53" of "Private Gold Coinage of California, 1849-55" by E. H. Adams. (See pages 104-106.)

?

I obtained a large number of U.S.A.G. and Moffat-U.S.A.G. coins, patterns and trials, in both gold and lead, together with the seven proofs. Included was a proof twenty, in silver, reeded edge, with 900 clearly over 884 (THOUS.). The lead trials (which I still have) are identical with those in the Joseph G. Mitchelson coll., which is on display in the Connecticut State Library in Hartford. I do not have duplicates of all of the Mitchelson pieces, but I have many lacking in the Mitchelson lot. All are of identical style and fabric.

WAS

OVER-DATE?

LEAD NOT THE SAME AS MITCHELS. N MY ARE THE SAME AS $20. ?

#12A

NEWMAN
10/11/64 PS. 3

EPN 3

All of the pieces that Franklin found (that were different) have been carefully photographed and listed. I have a filing cabinet of information on various unknown Pioneer coiners and mints, and in particular have much on the U.S.C.C. However, there is considerable information I have not had a chance to develop, most of it in the National Archives... Eleven years ago I obtained a microfilm of Hurbert's U.S.C.C. records (which Adams could not locate), together with other data.

If you wish, you can examine my files next visit and, in connection with the specific (and related) coins. Even so, I do not wish to have my discovery material published at this time. My reasons for this are quite easy to understand: (a) the source for most of the items unearthed is still very much alive, and I am trying to locate similar material, and (b) there are many loose ends to be covered, before the story could (or should) be told. Finally, I have instructed all of my friends and clients to cooperate fully with requests for coins to be photographed and examined.

ASKED EPN TO VISIT

Unfortunately, I must question the intent of your fellow inquisitors. With possibly two exceptions, these gentlemen are not in the pursuit of numismatic knowledge. In fact, at least two of them represent the epitome of numismatic ignorance. In order to keep premature conclusions and indiscreet statements to a minimum, any press that come to hand will be promptly referred to our attorneys.

For years, I have tried to put a little something back into the coin game which has been so good to me. Charles Hamer has encouraged this type of thinking, and I think that our sale catalogues speak for themselves. It seems ironic that the some of the baser elements in our hobby should be allied with certain numismatic minds in an investigation which seems senseless, and which seemingly must be carried on in a clandestine manner.

I am sorry that I gave you a hard time on the telephone, but there are times I get so disgusted that I wonder what I am doing in the rare coin business. There are many stables that could be cleaned, and I honestly feel that some of your associates could commence operations in their own backyards.

Keep in touch-

Best personal regards,

John J. Ford, Jr.

#12B

PAUL FRANKLIN
8302 E. MONTEREY WAY
SCOTTSDALE, ARIZONA 85257

Nov.23,1964

(1)

Dear John;

After our phone conversation the other day , I started to think about my past numismatic dealings. More than twenty five years ago I both bought from and sold coins to such people as Abe Kossoff, Joe Silverman, Dave Bullowa, Boss and Nagy of Phil. F.K.Saab, Smith & Son, Charlie Green, Stacks, Max Mehl and numerous others, many now deceased but many still living. I had nothing but a wonderful time in my dealings with these people. I also know they thought well of me and the dealings they had with me. In later years, the late forties and fifties, such people as Mrs.C. Bullowa, M.L. Kaplan, Leo Young, Hans Schulman, Friedberg of Gimbls, Lester Merkin,and numerous others including Empire Coin Co., W.F. Steinberg, and last but not least New Netherlands, These people too had many pleasant dealings with me. I still own many gold and silver coins bought from these people, such as my first San Francisco silver ingot from Stacks, A beautiful Moffatt $ 20. gold piece from a Schulman, Kreisberg sale, an unc. $ 20.gold United States Assay with uncrossed A's from Peter Seaby of London with the help of New NetherlandsCo.. A beautiful Unc. $50. gold slug (Humbert) from Bill Steinberg, and many many others just too numerous to mention.

With all the coins I have bought in over Twenty five years I have never returned one for any reason (I know what I am buying and am satisified with it). I can also say that no one within my memory has ever returned any coin to me (that I sold or traded to them) for any reason whatsoever. (mis-grading, false or counterfeit). Even the old Crosby electros that I own I have never sold and wouldn't. Tho I have received more than fair offers for them. I have never sold a Known cast or electro but have given some away free, as you well know. Even these were of no United States Coin. Any coin or piece that I have ever sold, I stand ready to buy back from the original buyer for what he paid me for it. Tho I might have to take a second mortgage on the old homestead or put my collection in hock to do so.

#13

PAUL FRANKLIN
8302 E. MONTEREY WAY
SCOTTSDALE, ARIZONA 85257

I am getting sick and tired of remarks and innuendos made behind my back, mostly by people I have never had dealings with and don't even know well. I am fairly even tempered and slow to burn but I think it is about time for me to consult a lawyer regarding my rights and the meaning of the words libel, conspiracy, and defamation. I also believe I should bring written charges against certain people,with the A.N.A. Dr. J. Sloss I have never met formally and know nothing about whatsoever. Eric P. Newmam I do not know well but I respect him for his numismatic knowledge and written works. He knows of me only through hearsay. John J. Pittmam I can say nothing well about so I say nothing. George J. Fuld I know well enough to do favors for and I just received a check from him for a Washington medal. He mentioned nothing in his letter to me regarding any conversation with others concerning me. I fully realize that these people have been members of the A.N.A. for a much longer period than I, with the exception of possibly George Fuld.

If such a group as I just mentioned have secretly banded to-gether to make statements,representations expressed either in print or writing, tending to expose me to public contempt or ridicule, this is called , I believe, conspiracy. If it hurts my reputation by being malicious, unfair or harmful, It is called defamation and is libelous.

Unfortunatly the trend of calling me the " Massapequa Mint" started with the trading to me of the small collection of medal dies formerly owned by F.C.C.boyd. This worsened with the purchase of the large Jos. K. Davison estate consisting of thousands of medal and decoration dies. The funny part is that the nearest thing to coin dies that I had and sold to such persons as Empire Coin Co.,R. Bashlow etc. (the impaired Wustoff xx shilling to Empire, the Continental Dollar to Empire, the Conway to Bashlow to name as you well know just a few) were used by them to strike thousands of restrikes or replicas. They do the dirty work,reap all the money and I get the bad name from people who do not even know the truth.

#139

December 3, 1964

Mr. Eric P. Newman
Edison Brothers Stores, Inc.
400 Washington Ave.
St. Louis 2, Mo.

Dear Eric:

I am doing something rather unorthodox, but I believe that I am doing the right thing.

Enclosed, you will find a photostat of the first two pages of a recent letter written to me by Paul Franklin. Paul wrote this letter following a telephone conversation with me, in which I advised him of the lengths to which the "inquisitors" were going, and had gone.

You do not know Paul Franklin, and perhaps reading his letter, might give you an insight into the man. I did not know that he was writing this letter, and I believe that he wrote it when he felt both deeply hurt and angry.

I have since written to Franklin and told him not to get too excited, as the situation was under control.

Very best personal regards.

Sincerely,

John J. Ford, Jr.

JJF:dn

Encl.

#14

INSTITUTE OF NUMISMATIC AUTHENTICATORS

WALTER BREEN, Founder Box 1032 · BERKELEY, CALIFORNIA

13 February 1967

Dear Mr. Ford:

The information you requested is herewith supplied.

You asked for an enumeration of United States coins of which collar varieties existed within a single year. The following list is incomplete but might be supplemented by examination of the ANS collection. It nevertheless should provide at least a basis for future research.

1837 Half Dollar. Four collars, one of them identical to that used on the 1836 reeded edge coin. (1) 29 mm. (2) and (3) 30 mm. One of these two is the 1836 collar. (4) 31mm. This is the rare one with wide rim around border beads, e.g. the Lathrop coin pictured by you in one of the NN sales. Other examples of the various collars are, or were, available in the NN stock.

1840 Half Eagle. Two collars. (1) 15/16", size of 1834-39 coins and apparently the same as some of them. This is the famous "Broad Mill" found on the earliest specimens of the year including the two proofs. (2) 14/16", size of 1841 and later coins; "narrow mill."

1840 C, D, O half eagles. Identical difference, broad and narrow mill varieties being known for each of these.

1876CC 25¢. (1) Regular collar, 119 reeds, found also on surrounding dates. (2) Rare collar, 153 reeds, found on a small minority of this date only.

1854 Gold Dollar. (1) Small size, type of 1853. (2) Large size.

1921 Morgan dollar. (1) Regular collar, 188 reeds. (2) "P.I.R." collar, 154 reeds, the discovery of Dr. W.Q.Wolfson.

1883 5¢ nickel. (1) 20 mm. Shield design coins are struck at this diameter. (2) 21 mm. Both Liberty head designs are struck at this diameter. Probably other small changes might be noted, in various denominations. A change of size in plain edge coins means a change of collar.

Other examples which should be investigated but of which I am less sure, having no coins to check up: (a) Half cents of 1831-36 appear larger than those of 1840-57, reflecting a change of collar size, parallel to (b): Large cents appear also to come in smaller size from 1840 (or 1844?) on than in earlier years. (c) There seems to have been a diminution in the sizes of dimes and half dimes after 1837. All these should bechecked at ANS. Likewise (d)(e) slight change of size in 1834 $5, $2½.

If we enter the question of pattern and experimental pieces, the list becomes immense indeed. Only a partial survey can be given on the accompanying page and I am not certain how relevant this is to your purpose. Your inquiry did not limit itself to regular issues.

1854 Half dime. German silver, plain edge, regular dies. J-166. Wide flan, struck in collar; evidently not in regular half dime collar.
1858, Cent.
Judd 194: AW 254. Cent, broad planchet, struck in collar. (Unique, from Longacre, A.S.Jenks, Maris collections.)
J-199: AW 247. Cent, broad planchet, struck in collar.
J-214, 216. Similar. Note the illustrations.
The other cents of 1858 are struck in the regular collar for Flying Eagle cents.

1860-61. Wider collars were used for making the pattern half eagles of this year, type of Judd 271 and 283, than for regular half eagles, in experiments to banish the platinum-filling menace.

1867. The aluminum 5¢ pieces come on much wider planchets, struck in collar, than the regular 5¢ nickel of the year. (Judd 561-562) Also, the unique (?) nickel J-565 appears to be wider than other nickels of the year, but the photographs I have are not good enough to enable me to take measurements. Note also that the mules J-582, 583 are struck in collar on unusually wide flans.

1868. The pattern 3¢ nickels of the year are in a 19mm collar, the regular--and the aluminum strikes from regular dies--in the regular 18mm collars. The pattern 5¢ nickels of the type of J-623 come on 22 and about 26mm flans, struck in collar, some with reeded edges. Several of the other types of 5¢ also come broader than normal, c.21mm.

1869. 3¢ nickel patterns: 19 mm; regular dies, 18 mm. As for 5¢ nickels, same comment as to 1868. It is also familiar enough that all the Standard Silver 10¢, 25¢ and 50¢ coins are smaller than the regular issues, coming in plain and reeded collars of the identical sizes.

1871. The two 5¢ nickel patterns of the year come in 22mm and 20mm sizes respectively, the 20mm being regular size.

1874. Bickford's International eagle comes only on a much broader flan than the regular issue. This was intentional and doubtless meant to combat the platinum filling menace even as in 1860-61.

1878. It is familiar enough that the lightweight standard Goloid Metric dollars are on smaller flans, struck in collar, than the regular and pattern dollars of this year; and that the various $2½ and $5 patterns are much broader than usual, for the same reason as in 1860-61,1874. (See Judd 1566-1574.)

1879-80. The goloid metric dollars with all obverses, Barber or Morgan, are smaller than other pattern or regular dollars of the year; struck in collar.

1881. The two 5¢ patterns are in 22mm collars; regular issue 20 mm.

1882. Some of the 5¢ patterns measure 22mm, some 21mm, regular 20mm for shield type, 21mm for Liberty head. This is entirely aside from the blind man's nickels.

1913. Note the first patterns of the Buffalo nickel, adopted type, 0.839" (17 struck, 2 in Smithsonian, 9 in private hands, the rest destroyed) and 0.869" (4 struck, only one surviving in private hands).

Respectfully submitted,

Walter Breen

For the Institute

7159

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

DEPARTMENT OF HUMANITIES

Cambridge, Massachusetts 02139

December 2, 1966

Mr. John J. Ford, Jr., Numismatist
176 Hendrickson Avenue
Rockville Centre
Long Island, New York

Dear Mr. Ford:

At your request I have analyzed the contents of "An Inquiry into the Authenticity of a Hoard of $20 United States Assay Office Gold Pieces," dated August 1966, by one Eric P. Newman whose principal qualifications seem to be that he is the founder and controlling interest in the Eric P. Newman Numismatic Education Society, otherwise unknown to me.

On page 3 of this report he states "Any opinion expressed must be based upon certainty, and for that reason facts relating to inconclusive findings or speculation as to facts will be omitted---------." I quite agree with this standard of numismatic scholarship. Let us see how it applies to Mr. Newman's own analysis -- especially to his consideration of coin #6.

He states "These lines are very close together and are separated by identical distances. These lines are not arcs formed from the same center point but are part of a perfectly uniform spiral or helix [sic] with the center point of the coin as a center." How does he know? To establish this as a fact would require the most careful examination on an optical comparator. Has this been done? Or is this statement "speculation as to facts"? I would want to see certification of these "facts" by a competent physical laboratory of established reputation before I would accept them.

Mr. Newman goes on "This design is so perfect that it had to be produced on a lathe and could not be cut by a skilled hand in 1853 or now." Here he has got beyond his competence. Such a design CAN be produced by even a reasonably skilled lathe operator now, and was being produced as early as 800 B.C. (See my "History of the Lathe to 1850"). Any competent lathe operator since Maudslay's time can back off his cutting tool by uniform hand rotation of his cross feed control to produce this order of accuracy. Newman's statement here is not only "speculative as to fact"; it is not "based on certainty". In fact it is based on ignorance of common machine shop practice now and in the past.

#16

Mr. Newman's argument continues in attempting to show that a lathe with automatic cross feed was required to produce such a pattern on coin #6 and concludes that "In 1853 the automatic cross cut device was not available on lathes in America." Here we have a categorical statement presented as based upon certainty, but in fact not at all based upon historical evidence.

We can consider two possibilities here. First, a lathe of industrial size, and second, lathes of watchmaker and jeweler capacities.

There is clear evidence (British Patent #6850) for automatic cross feed as early as 1835 and this feature was clearly embodied in an illustration of lathes offered for sale by Whitworth in 1843. Whitworth's firm was exporting these lathes all over the world. It is impossible to believe that this "device was not available on lathes in America" in 1853. American manufacturers at this time were so far ahead in their technical methods that a British Commission (of which Whitworth was a member) came over in 1855 to study them. These methods were imported into England (see Nathan Rosenberg "Great Britain and the American System of Manufacturing", Edinburgh U.P. 1966). Surely either Robbins & Lawrence in Springfield, Vt. or the Colt Armory, Hartford, Conn., or Brown & Sharpe, Providence, R.I. had such a tool. At the New York Exhibition of 1853 Whitworth lathes were exhibited. There is every reason to believe that such a lathe was available in the United States in 1853. Positive proof would, however, require further special research. But since I have already indicated that a lathe with automatic cross feed was not necessary to produce the marks on coin #6 and that lathes on which it could have been done were certainly available at many places in the USA, such research seems pointless.

In any case there is a second method by which these marks, whether concentric or spiral, could easily have been produced -- a jeweler's rose engine. Engines of this sort were available in Europe and in the United States prior to the American Revolution, without the shadow of a doubt (see my "History of the Lathe"). The question then arises -- Were such rose engines available in as industrially undeveloped a spot as California in 1853? Here we have conclusive evidence that they were, in fact that they were in the hands of the very man concerned in the United States Assay Office -- Augustus Humbert -- by 1851. Humbert, a New York watch case maker would certainly have taken his rose engine -- a critical and valuable tool for a watch case maker -- with him to California, and such an engine would have been of a size involving no transportation difficulties on the way. We have clear and conclusive evidence that he did in the series of coins illustrated on pages 221-225 of R. S. Yeoman's "Guide Book of United States Coins", 20th edition, 1967. The designs shown on these coins positively could not have been made without a rose engine. On such an engine the marks on coin #6 could be easily produced.

Mr. Newman's argument against the authenticity of coin #6 therefore is completely unsound both technically and historically.

We come then to the problem of how such marks came to be on this coin. Mr. Newman's argument beginning with the last paragraph on page 11 (already obviously frantic and prejudiced by his use of words such as "devilment", "menace", "tragedy", etc.) is simply preposterous. I suspect that Mr. Newman knows this perfectly well, but doesn't want to admit it even to himself.

At a later date I shall write you describing a more rational and more technically sound explanation of how these marks on coin #6 may have come to be.

Robert S. Woodbury
Professor
History of Technology

RSW/ar

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

DEPARTMENT OF HUMANITIES

Cambridge, Massachusetts 02139

December 8, 1966

Mr. John J. Ford, Jr., Numismatist
176 Hendrickson Avenue
Rockville Centre
Long Island, New York

Dear Mr. Ford:

Further to my letter to you of 2 December 1966 concerning the Newman "Inquiry into the Authenticity of a Hoard of $20 United States Assay Office Gold Pieces," dated August 1966. We have the question remaining of how the marks on Coin #6 were most probably produced.

Let us clear the field by stating at the outset that the techniques speculated on by Mr. Newman for "counterfeiting" this coin positively would not reproduce the fine curved lines, concentric or spiral, appearing on the eagle face of Coin #6 in a sector of approximately 30° to 200° from the vertical axis of the coin. The incredibly expensive and difficult techniques he describes could reproduce many features of a coin such as this, but the very fine lines in question would certainly not be reproduced with the clarity evident under high magnification of them.

We can also eliminate the possibility that they were put on the coin for ornamental purposes because: a) they do not extend over the whole face of the coin, b) they show no symmetry of design such as are to be found on the coins shown on pages 221-225 of Yeoman's "Guide Book," 1966.

Since we know that these coins were not produced in a fully equipped U.S. Mint and fairly clearly were produced by relatively simple methods, perhaps even hurriedly, we can accept as certain that these marks were unintentional or at least inadvertent.

ONLY SENT GROUP III COIN PHOTOS

It also seems likely that this "hoard" was a collection of trial pieces made at about the same time, since all have certain imperfections presumably common to one pair of hubs.

In the absence of certain knowledge that these lines on Coin #6 are portions of either concentric circles or of a spiral, let us consider both. If they are parts of concentric circles, clearly they were

#17

put on the coin for decorative purposes. If so, then why do they not form complete circles? Surely no one would maintain that they were intentionally erased from one sector of the coin and not from other sectors.

Unless, then, we have positive proof that these marks are concentric circles, we can reject that possibility.

The next, and far more likely possibility is that these marks are portions of a spiral cut in either the gold planchet from which the coin was made or in the die blank by which it was stamped. If they are portions of a spiral, as seems almost certain, they were certainly cut in some kind of lathe. What kind of lathe? They could be done in a rose engine, as I suggested in my letter of 2 December 1966. But a rose engine is intended for making quite light cuts, usually in the softer metals, and for ornamental purposes. Since my argument above eliminates intentional ornamentation (whether the lines are circles or a spiral) we can eliminate a rose engine as a very likely solution.

We are then left with an ordinary lathe, almost certainly with mechanical cross feed, but as indicated in my letter of 2 December 1966, not at all required to have automatic cross feed. Such a lathe was surely available in California in 1853. These lines on Coin #6 would be recognized as either those left by a cutting-off tool or those left by facing the end of the bar of stock to get a surface flat and perpendicular to the axis. When a bar of stock, presumably cylindrical, has a disc cut off from one end of it (the bar being held in a conventional chuck and not between centers), it is done by a tool with a narrow cutting edge parallel to the axis about which the bar of stock is rotating. The corners of this tool leave just such fine marks as are seen on Coin #6, and would be spiral. The same marks would be left by a facing-off tool. Since the cut in the latter procedure is light and usually made from the center to the outer circumference, it would be easier to do the work with more accurate spacing of the spiral lines in this manner. So of the two possibilities I believe that these marks were more probably made with a facing-off tool on a lathe with mechanical, but hand controlled cross feed.

The question then remains were they made on the planchet or on the die blank? To find these marks on the planchet used to make Coin #6 we would be forced to assume that the gold was worked into a cylinder of diameter at least as great as that of the planchet, a disc cut off and then faced on a lathe. In view of the practice since Da Vinci's day of producing the planchet by punching from a bar of gold of the requisite thickness and the extreme unlikelihood of anyone hammering out, drawing, or rolling a cylinder of gold of these dimensions, we can safely reject this possibility.

The other, and by far the most certain explanation, -- one which fits all the facts to be found on Coin #6, the facts of tool technology, the facts of tool history, and the logic of unspeculative common sense

#179

is that these marks were made in facing-off the end of a steel cylinder for a die blank. This would be done on a quite ordinary and common lathe using hand control of the mechanical cross feed. This cylindrical piece, contrary to usual practice, was then smoothed and perhaps polished on only part of its face, before the die was impressed. The remaining tool marks would then be reproduced exactly as found on Coin #6.

Why were these marks on the die blank not removed entirely before hubbing? There are a number of possibilities, no one of which is clearly indicated. Perhaps the material used in polishing the cylindrical die blank covered the marks until after the die impression was taken. More likely, the haste in which this obverse die was prepared might have precluded careful examination (and thus preparation) of the die blank. Either carelessness or the regular modus operandi of the United States Assay Office could be the contributable factor; after all, examination of the other "proof-like" coins in this hoard suggests that the blanks were polished extensively, not the dies. (The lines on the die could have been removed before the die was completed by fully polishing down the die blank, or after the blank was hubbed, by polishing down the die.) It must be remembered that this was not a U.S. Mint operation until the following year, and that the coins under discussion were undoubtedly produced hurriedly to meet the requirements of the San Francisco Collector of Customs.

To sum up:

1) There is a simple, clear, and logical explanation for these lines on Coin #6.

2) This explanation in no way rules out these coins being authentic.

3) The explanation offered by Mr. Newman is unsound technically and historically and certainly does not prove that this coin is counterfeit.

4) Mr. Newman's technique of the alleged counterfeiting of Coin #6 is too preposterous technically to be worth detailed refutation, and simply does not fit the facts.

Robert S. Woodbury

Robert S. Woodbury
Professor
History of Technology

RSW/ar

#178

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

DEPARTMENT OF HUMANITIES

Cambridge, Massachusetts 02139

January 30, 1967

Mr. John J. Ford, Jr.
176 Henrickson Avenue
Rockville Centre
Long Island, New York

Dear Mr. Ford:

In connection with my letters to you of 2 and 8 December 1966 I have carefully examined the 1862 Half Anna of India, together with the enlarged photographs of it which you kindly sent me.

Despite the many scratches in the field of this coin there are very clear lines on the head of Victoria, both on the face and neck and in the hair and crown, which are certainly circular and centered about a point in one of the plaits of her hair just below her ear lobe. These lines are not at present to be found elsewhere on this face of the coin. But at least on the field, if they ever were there, any traces of them have been removed by whatever produced the criss-cross scratches now evident in the field.

Most of the analysis in my letter of 2 and 8 December 1966 would apply equally to this coin. It would be most difficult to establish that these lines are concentric circles, because of the limited number of them to be found on this coin as compared to those on Coin #6 of the $20 USAOG. But as in my previous analysis, in the absence of proof that they are concentric there is every reason to believe that they are spiral. They are certainly too regular to have been produced by purely hand skills. They are then, I am certain the result of lathe work. Lathes quite capable of doing this work, again with hand control of a mechanical cross-feed were certainly available in England and in India by 1862.

In short, it is my firm opinion that these lines are the result of essentially the same methods in preparing the dies used for the Coin #6 $20 USAOG. The reasons for doing this kind of work may, of course, have been quite different in India from those in San Francisco, but the techniques and the results are the same.

This 1862 Victoria Half Anna then definitely shows that the lines on Coin #6 $20 USAOG are by no means unique, and that Newman's statement on page 8 of his "Inquiry" that he is "unaware of such a marking on any other coin of any type," carries no weight at all in the question of the authenticity of Coin #6 $20 USAOG.

Robert S. Woodbury
Professor
History of Technology

#18

Telephone: ROYAL 8261 Ext.
709 3424
91-488 3424

IF.

YOUR REFERENCE

MINT REFERENCE 099/3/6.

ROYAL MINT,
TOWER HILL, LONDON, E.C.3.

16th February, 1967.

Dear Sir,

Mr. Warden has left the Mint and I am afraid there has been some delay in bringing your letter of 19th December to my attention.

I have shown your photographs to our Chief Engraver and he is inclined to think that your explanation of the raised lines is probably correct. As you know, prior to receiving blows from the punch the top of the die is turned to the shape of a cone. Usually the marks of the turning are removed by buffing but for some reason this seems not to have happened (or at least only partly to have happened) in the case of the two coins in question. The subsequent hardening of the dies would have exaggerated the lines.

I do not know which Mint struck the gold half-anna of 1862 or indeed which of the three Indian Mints were striking half-annas at that time.

Yours faithfully,

G P Dyer

(G.P. DYER)

John J. Ford, jr.,
Rockville Centre,
L.I., New York,
U.S.A.

#19

Box 426
Roslyn Heights, N. Y. 11577

July 15, 1967

Mr. John J. Ford, Jr.
176 Hendricksen Avenue
Rockville Center, N. Y. 11570

Dear John:

I have studied the report entitled "An Inquiry Into The Authenticity Of A Hoard Of Twenty Dollar United States Assay Office Gold Pieces", and am wholly in disagreement with both its technical content and all of its erroneous conclusions. Further, I have examined many specimens from the Hoard, as well as undisputed genuine specimens, and can unequivocally state that the Hoard specimens are authentic experimental pieces made from Hubbed dies -- the Hubs being directly attributable to the unquestionable master matrices!

The report was most disappointing; it shows complete misunderstanding of "Hubbing" and its normal practice -- which, in itself, readily explains the die progression noted.

However, I am concerned lest X-ray diffraction by the reflection method be looked askance at in the future, because of this erroneous report, and, therefore, would like to absolve it by commenting on page 9, paragraph 2, of said document.

> "Only coins number 2, 3, 4, 5, 6, and 7 were tested by X-ray diffraction and the photographic prints have been interpreted to show that the planchets for coins number 5 and 7 were cast rather than drawn, while the others were not cast. The photographic results show a much greater dispersion of the rays passing through numbers 5 and 7. The fact that planchets for numbers 5 and 7 are not rolled and drawn and differ from number 6 which was machined, adds further to the fact that abnormal planchet production occurred in these instances."

Comment: All planchets are derived from casting the gold alloy into slabs called ingots, the size and thickness of which is determined by the quantity of gold needed. Since this was experimental work and not production work, probably small batches of each gold alloy were carefully prepared and then melted and cast into small thin ingots. Pure gold is soft; it is hardened by alloying and "cold work" (such as rolling or striking). Copper is a hardener added to gold coins to make them more durable in circulation. The gold alloys used here contained various copper content, including none, and, therefore, when cold rolled to thickness "worked" differently. Some ingots required much more cold rolling to final thickness than others; thus the grain size of the former was smaller than

#20

the latter by virtue of the metal being more compacted by additional working. Accordingly, we should expect to find planchets with varying degrees of grain size--fine to coarse.

All planchets prior to striking have to be heat annealed to make them sufficiently soft to minimize coining pressures and die damage and to prevent the struck coins from cracking. This striking of the planchets by obverse and reverse dies, together with the expansion of the flan edge into the reeded collar, work hardens the coin, especially in surface and near surface areas. Where coin thickness (as in this case) is appreciable, compared to the imparted "Design Relief", most of the metal deformation and flow is in these aforementioned areas. The section deep within the coin is not appreciably affected by normal coining pressures, and is, for the most part, of grain structure dependent on its prior history, i.e., cast ingot to final reduced thickness chronology. Since different alloys required different degrees of rolling and, hence, possessed varying grain size, the struck specimens also possessed varying internal grain size particles.

X-ray diffraction by the reflection method was used to draw an erroneous conclusion. This method, under favorable circumstances, can be used to measure the stress deformation imparted to a struck coin at its surface and near surface areas.* (See reference 1.) However, when the grain structure of the specimen is relatively large, or coarse, the X-ray diffraction rings show a much greater dispersion, making the stress determination most impossible! (See reference 2.) This is why line 2 of paragraph 2, page 9, says: "and the photographic prints have been interpreted to show that the planchets for coins number 5 and 7 were cast, etc.". Therefore, the X-ray diffraction method is inapplicable for those experimental coins with coarser grain structures, except to prove that they had comparatively coarser grains than other specimens by virtue of their prior history.

In short, X-ray diffraction is an excellent tool when properly used. To do so, its limitations must be carefully considered.

Sincerely,

Theodore L. Craige

TLC:AO
ENC.

Theodore L. Craige.

* As such, it is a valuable method to differentiate a cast coin, with a near perfect surface, from a struck piece. The former possesses no appreciable stress characteristic as a result of its molten metal cooling to form design relief, whereas the latter, by comparison, possesses substantial stress deformation due to huge striking pressures and consequent work hardening.

#20A

X-RAY STUDIES OF MATERIALS

A. GUINIER

Service de Physique des Solides,
Faculté des Sciences, Université de Paris,
Orsay (S.-et-O.), France

D. L. DEXTER

University of Rochester,
Rochester, New York

1963

INTERSCIENCE PUBLISHERS

a division of John Wiley & Sons,
New York • London

NOTE

This enclosure contains reference 1, page 98
and reference 2, page 101.

#21

length of some gage under applied stresses. From the measured strains the stresses are deduced from knowledge of the elastic constants. For X-rays, the gage chosen is the reticular spacing of one of the families of crystalline planes. One difficulty arises in the application of the theory of elasticity, namely, that we work with crystals in which, even if cubic, a large variation of elastic constants can exist in different directions. Nevertheless, the material is treated as isotropic, an approximation which is sometimes justified because the polycrystalline metal is an aggregate of crystallites with diverse orientation and, at least macroscopically, *is* isotropic to a considerable degree. Still, the crystalline anisotropy has the consequence that the elastic constants determined macroscopically sometimes differ from those which must be used for X-rays. In the two cases a different averaging procedure is involved.

The internal elastic deformation of a metal is always very small, of the order or less than 10^{-3}. It follows that even with precise parameter measurements no great relative precision in the determination of internal stress can be expected from X-ray measurements.

Experimentally, the photographic method in back-reflection is generally used. The principle consists of recording on a photographic plate the diffraction rings at large angles produced by the metal studied and often, at the same time, the rings produced by a standard sample, thus eliminating the necessity of sensitive measurements of the distance from the sample to the film.

In back-reflection measurements, particularly with the strongly absorbed long-wavelength X-rays commonly used, the resulting information is largely confined to the surface properties of the sample. The theory of elasticity for a homogeneous isotropic continuum is applied in the interpretation. Of the three principal stresses, one, normal to the surface, is zero, and the other two, in the tangential plane, σ_1 and σ_2, are the two unknowns needed to specify completely the state of stress near the surface.

Reference #1

#21A

A second method allows the elimination of the experiment with the stressless specimen, which sometimes is not available, in making two measurements on the same sample, one at normal incidence and the other at 45°. The accuracy may be a little greater than that of the first method.

These strain measurements with X-rays were begun about 30 years ago, especially in German laboratories (see Glocker), but were not widely used in industrial laboratories because of the considerable experimental difficulty. Actually, in order to obtain the precision indicated in the preceding paragraphs, the metal must satisfy certain conditions. On the one hand, the grain must be rather small so that the line is uniform and continuous; if the sample were composed of rather large grains so that the lines are punctuated, it would be impossible to determine the position of maximum intensity of the ring with the required precision.

Some samples, although sufficiently fine grained, do not yield sharp lines, as, for example, in the case of martensite, nitrided or cemented steels, and it is impossible to determine the center of the line with sufficient precision. The width of the line results in general from lattice distortions. In short, the gage, i.e., the lattice spacing, is not in this case defined well enough that a good determination can be made.

It is best to verify the constants of the final formulas such as equation 7.10 by a calibration with metals submitted to known stresses. Occasionally, an error in the calculation results from the use of macroscopic values of E and γ.

In spite of these inconveniences, the advantages of the X-ray method are obvious in comparison with difficulties encountered in other methods. In particular, it is a completely nondestructive method. Measurements are made, furthermore, on a very small area of the sample's surface; therefore, variations in the local strain can be followed millimeter by millimeter. Finally, one can clearly distinguish plastic deformations, which do not perceptibly change the spacing, from elastic deformations which do, whereas macroscopic extensometers record the sum of elastic and plastic deformations.

Reference #2

#22

September 30, 1966

Miss Eva Adams
Director, Bureau of the Mint
Treasury Dept.
Washington, D.C.

Dear Miss Adams:

It seems that I only write to you when I have a problem. In this case, I have a very serious problem, and I need a technical opinion from the highest possible level.

I am involved in a study relating to the authenticity of several Twenty Dollar gold coins, supposedly struck by the U. S. Assay Office of Gold in San Francisco, California, in 1853. These coins were technically official issues of the U. S., authorized by an Act of Congress in 1850 but a recent opinion from the Treasury Dept. (1964) states that these pieces are not now considered an obligation of the U. S., and that the Secret Service has no jurisdiction over them should they prove to be false.

My problem is, that I have been told that these $20 gold coins are reproductions of modern manufacture, struck in the conventional way but from "steel or other hard metal" dies created by casting. The mould(s) used, it is contended, were composed of a ceramic composition.

The actual size of the coins under discussion is that of a regular $20 gold piece, 34.25 mm. I am enclosing an 8x10" photographic print, showing the reverse of one of the allegedly false pieces, enlarged to 7 5/8" in diameter. I am also enclosing, pages eleven and twelve of a report that attacks the authenticity of these USAOG pieces, and which specifically puts forth the above theory concerning their probable method of manufacture.

In addition to describing how these coins were possibly made from cast steel dies, the enclosed report also contends that different varieties of these coins (which are known in silver, copper and lead, as well as gold) could have been made by alteration of a steel hub which, it is said, was made by pressing the cast die into a piece of "soft" steel.

#23

I would like to know if any of this is possible from a practical technical standpoint. I am considered somewhat of an authority in the rare coin business in connection with counterfeit coins and methods of manufacture but this is the first time I have heard of CAST steel dies, and wonder if they have developed precision steel casting to the extent that coins of the quality, shown on the enclosed photo (geometric design and all) can be struck from a die so made.

I realize that the Bureau of the Mint has made some experiments with the Spark Erosion process towards making coin dies, and that some of your people are undoubtedly familiar with powdered metallurgy, pressure impact die techniques and other modern methods of manufacture, presumably of more value to the counterfeiter than a legitimate minting operation. I would consider it a very great favor if you could have some technical member of your staff read the enclosed and apply the process described in his mind to the enclosed photograph, and tell me if he has ever heard of cast steel dies so made and used. If he has not heard of the process, in reference to coin manufacturing, I would not be surprised. On the other hand, if he has heard of the process, I would be very much interested in knowing if it has been developed to the stage where a coin of the indicated quality could be made.

I realize that this request for information is possibly an imposition, but I can think of no one who could be in a better position to help. I can not tell you how much your cooperation in this situation will be appreciated, and I sincerely hope that you can do something for me.

Respectfully yours,

JJF:dn

John J. Ford, Jr.

Encl.

#239

TREASURY DEPARTMENT
WASHINGTON, D.C. 20220

OFFICE OF
DIRECTOR OF THE MINT

October 18, 1966

Mr. John J. Ford, Jr.
176 Hendrickson Avenue
Rockville Centre, New York 11572

Dear Mr. Ford:

This letter is in reply to your letter of September 30, concerning precision casting techniques. Precision casting for legitimate purposes is well established in industry for the production of a wide variety of items of many materials, including die steels.

Your inquiry applies to the preparation by this method of steel dies suitable for use in the subsequent striking of counterfeit coins. You ask whether the precision casting technique "has been developed to the stage where a coin of the indicated quality," as shown on an enclosed photograph, could be made.

Although we are continually examining questioned U. S. coins, many of which are determined to be counterfeit, this office has not had occasion to examine a counterfeit coin known to have been struck from dies produced by the described precision casting technique. However, our information, obtained from government experts who were instrumental in the development of the process, indicates that the following is true concerning the method, as it might be applied to the manufacture of coinage dies, either genuine or counterfeit:

(1) The fineness of detail attainable by present methods of hubbing will not be equaled in dies produced by the casting method;

(2) Each cast die would necessarily go back to the engraver for hand or mechanical work which would result in variations between dies which would be apparent to an expert examining the resulting coins.

We do not know of any instance where a government mint has used cast steel dies for striking coins. However, we feel that, given sufficient care in the preparation of the dies and blanks, a piece of high quality could be produced. This does not say that the piece so produced would be indistinguishable from the genuine

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#24

coin used to make the mold. One major reason for the coins' being distinguishable is frankly stated in the report, "The shrinkage of steel in the casting produces a slight size differential which is unnoticeable unless measured by precision instrumentation."

In summary, although we lack practical experience with pieces produced by precision casting methods, and although pieces of relatively high quality may conceivably be struck, we feel that there are inherent flaws in this method of counterfeiting which render such pieces amenable to detection.

We hope that the above information will be of assistance to you. If you have other questions in this matter, please let me know.

Sincerely,

Eva Adams

Eva Adams
Director of the Mint

#249

MUSEUM OF FINE ARTS BOSTON, MASSACHUSETTS 02115 MFA

Research Laboratory

$20.00 Gold Coin 1853, 900 fine
United States Assay Office of Gold
San Francisco
"Franklin hoard coin" USAOG-111
Weight 514.6 grains
Property of Mr. Harry J. Forman, Philadelphia, Pennslyvania

Obv. Vertical field scratch from l. side of upright of second T in STATES to scroll at a point above r. stand of T in THOUS. Vertical dig in field below scroll directly below l. side of H in THOUS. Shallow surface dig in field opposite shield between (closer to) U of UNITED and T of TWENTY.

Rev. Defect in field following center of E in OFFICE; light diagonal scratch from this point to center of l. stand of N in FRANCISCO. Spot in field near right frame line, diagonally below Y of ASSAY.

. . . . . .

Analysis of the coin by X-ray fluorescence to determine the percentage of gold and silver or copper in the alloy; carried out by Florence E. Whitmore, Research Laboratory, Museum of Fine Arts, Boston; requested by John J. Ford, Jr., Long Island, New York.

Gold %	Silver %
91.0	8.0

Weight of gold coin: 33 gr. 345 mg. or 514.6 grains; specific gravity 17.945 (rel. humidity 46, temp. 77°F.)

Museum No. T.L. 13,428
Examination No. 67.10
May 5, 1967

Technical Assistant

#25

MUSEUM OF FINE ARTS BOSTON, MASSACHUSETTS 02115 MFA

Research Laboratory

$20.00 Gold Coin 1853, 900 fine
United States Assay Office of Gold
San Francisco
"Franklin hoard coin" USAOG-104
Weight 516.6 grains

Property of Mr. Werner Amelingmeier, Merrick, New York

Obv. Pin-point rim dig above l. stand of A in STATES. Diagonal dig in field below l. stand of first T in STATES. Curved scratch in r. field above scroll end pointing between ER of AMERICA.
Rev. Nick in border field at a point just below 11'o'clock.

. . . . . .

Analysis of the coin by X-ray fluorescence to determine the percentage of gold and silver or copper in the alloy; carried out by Florence E. Whitmore, Research Laboratory, Museum of Fine Arts, Boston, requested by John J. Ford, Jr., Long Island, New York.

Gold %	Silver %	Copper %
89.0	9.0	0.5-1.0

Weight of gold coin: 33 gr. 476 mg. or 516.6 grains; specific gravity 17.44 (rel. humidity 46, temp. 77°F.)

Museum No. T.L. 13,429
Examination No. 67.11
May 5, 1967

Florence E. Whitmore
Technical Assistant

P2C

MUSEUM OF FINE ARTS BOSTON, MASSACHUSETTS 02115 MFA

Research Laboratory

$20.00 Gold Coin 1853, 900 fine
United States Assay Office of Gold
San Francisco
"Franklin hoard coin" USAOG-124
Weight 516.0 grains

Property of Mr. Henry H. Clifford, Los Angeles, California

Obv.

Rev.

. . . . . .

Analysis of the coin by X-ray fluorescence to determine the percentage of gold and silver or copper in the alloy; carried out by Florence E. Whitmore, Research Laboratory, Museum of Fine Arts, Boston; requested by John J. Ford, Jr., Long Island, New York.

Gold %	Silver %	Copper %	Iron %
88.0	8.5	3.0	trace

Weight of gold coin: 33 gr. 437.4 mg. or 516.0 grains; specific gravity 17.41 (rel. humidity 46, temp. 77°F.)

Museum No. T.L. 13,430
Examination No. 67.12
May 5, 1967

Florence E. Whitmore
Technical Assistant

#27